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Remarks/Arguments

After the foregoing amendments, claims 1-16 are pending in this application. Claims 1, 4, 7, 9, 12 and 15 have been amended to more distinctly claim the subject matter which Applicants regard as the invention. Applicants respectfully request additional consideration and review of the claims in view of the foregoing amendments and the following remarks.

Rejections Under 35 U.S.C. §102

The Examiner has rejected claims 4-5 and 12-13 under 35 U.S.C. §102(b) as being anticipated by Suzuki et al. (U.S. Patent No. 6,459,518). Applicants respectfully traverse the rejections.

Claims 4 and 7, as amended, recite inter alia, a transmitter or means for modulating the phase of said optical pulses in said first and second streams as a function of first and second streams of input data applied to said transmitter, respectively, to encode said first and second streams of input data onto said first and second stream of RZ optical pulses, respectively.

A careful review of Suzuki et al. reveals that the reference discloses an optical transmitting apparatus that is fundamentally different from the Applicants' claimed invention. Specifically, Suzuki et al. teaches the use of phase modulation for the purpose of obtaining better transmission characteristics in RZ transmission (col. 2, lines 21-22) by chirping the RZ pulses. This format is commonly known as chirped return-to-zero (CRZ) on-off keying (OOK) modulation. Applicants submit that Suzuki et al. fails to teach or even suggest the use of a means for modulating the phase of optical pulses to encode input data onto RZ optical pulses.

Accordingly, Applicants submit that Suzuki et al. does not anticipate claims 4-5 and 12-13, and respectfully requests that the rejections under 35 USC §102(b) be withdrawn.

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The Examiner has rejected claims 1-3, 7-11, and 15-16 under 35 U.S.C. 102 as being anticipated by Price et al. (U.S. Patent No. 6,522,439). Applicants respectfully traverse the rejections.

Applicants submit that Price et al. discloses methods and apparatus that provide for simultaneously upconverting electrical signals carrying information onto one or more subcarrier lightwave frequencies where, in one embodiment, "adjacent wavelength signal[s] can be orthogonally polarized to decrease the extent of four wave mixing that occurs between the signals during transmission."

In sharp contrast to the disclosure of Price et al., independent claims 1, 7, 9 and 15 are directed to methods and apparatus for generating a stream of RZ optical pulses in which alternate ones of such pulses have essentially orthogonal polarizations, and modulating the phase of the "alternated" pulses to encode input data. Specifically, as discussed in the specification (pages 7-8), adjacent bits within a single wavelength channel are essentially orthogonal to reduce intra-channel nonlinear effects, as opposed to the inter-channel nonlinear effects addressed in Price et al.

Accordingly, Applicants submit that Price et al. does not anticipate independent claims 1, 7, 9 and 15, as amended, nor the claims which depend therefrom, and respectfully request that the rejections under 35 USC § 102(b) be withdrawn.

Rejections Under 35 U.S.C. §103(a)

Claims 6 and 14 have been rejected under 35 U.S.C. §103(a) as being unpatentable over Suzuki et al. in view of Hasagawa (U.S. Patent No. 4,406,516). Applicants respectfully traverse the rejections.

In view of the above amendments and remarks regarding the distinctions between the methods and apparatus of the claimed invention and the disclosure of Suzuki et al., Applicants submit that the disclosure of Hasagawa in no way makes up for the shortcomings of Suzuki et al. Specifically, Hasagawa fails to disclose, teach or suggest modulating the phase of optical pulses as a function of input data applied to a transmitter to encode the input data onto a stream of RZ optical pulses.

Accordingly, Applicants submit that the combination of Suzuki et al. and Hasagawa do not render obvious claims 6 and 14 (which depend from independent

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claims 4 and 12) for at least the reasons discussed above, and respectfully request that the rejections under 35 U.S.C. §103(a) be withdrawn.

Conclusion

Insofar as the Examiner's rejections have been fully addressed, the instant application, including claims 1-16, is in condition for allowance. A Notice of Allowance is therefore respectfully solicited.

If there are any outstanding issues that the Examiner feels may be resolvable by way of a telephone conference, the Examiner is cordially invited to contact the undersigned to resolve the issues.

Respectfully submitted,

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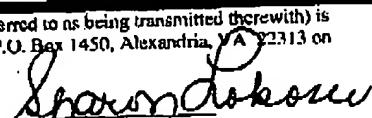
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March 9 2005


Sharon Loboce